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(54) **Emulating a delayed exception on a digital computer having a corresponding precise exception mechanism**

(57) A digital computer system comprises a precise exception handling processor and a control subsystem. The precise exception handling processor performs processing operations under control of instructions. The precise exception handling processor is constructed in accordance with a precise exception handling model, in which, if an exception condition is detected in connection with an instruction, the exception condition is processed in connection with the instruction. The precise exception handling processor further includes a pending exception indicator having a pending exception indication state and a no pending exception indication state. The control subsystem provides a series of instructions to the precise exception handling processor to facilitate emulation of at least one emulated program instruction. The emulated program instruction is constructed to be processed by a delayed exception handling processor which is constructed in accordance with a delayed exception handling model, in which if an exception is detected during processing of an instruction, the exception condition is processed in connection with a subsequent instruction. The series of instructions provided by the control subsystem in emulation of the emulated program instruction controls the precise exception handling processor to

ception and condition the pending exception indicator to the no pending exception indication state

(ii) perform processing operations in accordance with the emulated processing instruction; and

(iii) if an exception condition is detected during the processing operations, to invoke an exception handler in accordance with the processor's precise exception handling model to condition the pending exception indicator to the pending exception indication state, so that the exception condition will be processed during processing operations for a subsequent emulated program instruction.

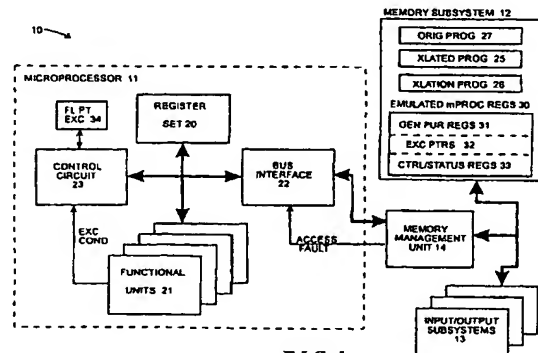


FIG. 1

(i) determine whether the pending exception indicator is in the pending exception indication state and, if so, to invoke a routine to process the pending ex-

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# EUROPEAN SEARCH REPORT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
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A	SILBERMAN G M ET AL: "AN ARCHITECTURAL FRAMEWORK FOR MIGRATION FROM CISC TO HIGHER PERFORMANCE PLATFORMS" , INTERNATIONAL CONFERENCE ON SUPERCOMPUTING, CONFERENCE PROCEEDINGS XP000576925 * page 207, right-hand column, line 29 - page 208, right-hand column, line 25 *	5,14,23, 32	
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			G06F
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>25 May 2000</b>	Examiner <b>Kingma, Y</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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